## REMARKS

Attached hereto is a marked-up version of the changes made to the specification by the current amendment. The attached page is captioned "Version with markings to show changes made."

**Pending claims**

Claims 1-20 were originally filed in this application. By this Amendment, claims 1-20 have been cancelled and substituted with new claims 21-33. New claim 21 basically corresponds to originally filed claims 1 and 2. New claim 22 basically corresponds to originally filed claim 3. New claim 23 basically corresponds to originally filed claim 12 (it is submitted that this claim falls within the election of the Restriction Requirement and contains the elected SEQ ID NO). New claims 24 and 26 basically correspond to originally filed claims 13 and 14, respectively (it is submitted that these claims fall within the election of the Restriction Requirement and contain the elected SEQ ID NO). New claim 25 is directed to a transgenic organism comprising the recombinant polynucleotide of claim 23. New claim 27 basically corresponds to originally filed claim 16. New claim 28 basically corresponds to originally filed claims 9, 10 and 11 (It is submitted that this claim falls within the election of the Restriction Requirement). New claims 29, 30 and 31 basically correspond to originally filed claim 7. New claim 32 basically corresponds to originally filed claim 15. New claim 33 basically corresponds to originally filed claim 19.

Please note that some of the subject matter disclosed within the originally filed claims is not contained in the set of new claims. Applicants expressly state that said subject matter is not being pursued in order to expedite prosecution of the new claims and **not** for reasons related to patentability, as said subject matter is in fact fully supported by the specification as filed. Applicants expressly reserve the right to reinstate claims to previously disclosed subject matter or to add other claims during prosecution of this application or a continuation or divisional application. Applicants expressly do not disclaim the subject matter of any invention disclosed herein which is not set forth in the instantly filed new claims.

**Restriction Requirement**

In the Restriction Requirement, the Examiner requested Applicants to elect one of the following inventions:

Group I (claims 1, 2, 15 and 19) drawn to a polypeptide, a composition comprising the polypeptide and a pharmaceutical method of use.

Group II (claims 3-14) drawn to a polynucleotide, a method for detecting a polynucleotide and nucleic acid constructs and a method of use in protein synthesis.

Group III (claim 16) drawn to an antibody.

Group IV (claim 17) drawn to an agonist of the polypeptide.

Group V (claims 18 and 20) drawn to an antagonist and a pharmaceutical method of use.

Applicants hereby elect, with traverse, to prosecute Group II, which includes and is drawn to at least new claims 22-24, 26 and 28-31. Applicants reserve the right to prosecute the subject matter of nonelected claims in subsequent divisional applications.

In the Restriction Requirement, the Examiner further requested Applicants to elect a single SEQ ID NO.

Applicants hereby elect, with traverse, to prosecute SEQ ID NO:15, which includes and is drawn to at least new claims 22-24, 26 and 28-31. Additionally, Applicants bring to the Examiner's attention that **SEQ ID NO:10 encodes the identical structural domains as SEQ ID NO:15 which are necessary for the encoded protein's functioning as a transport protein**, discussed *infra*. Thus, Applicants submit that at least SEQ ID NO:10 should also be examined, as it is a member of a Markush group. Applicants reserve the right to prosecute the subject matter of nonelected SEQ ID NOs in subsequent divisional applications.

Applicants traverse this Restriction Requirement on several grounds.

First, Applicants traverse the Restriction Requirement as between the claims of Groups II and I (drawn to polypeptides related to SEQ ID NO:7, encoded by SEQ ID NO:15). Many of the elected claims of Group II are directed specifically to polynucleotides encoding the claimed polypeptides, and thus it is presumed that a proper search for the claimed polynucleotides would include the polypeptides

which they encode. Therefore, it is submitted that it would not be a substantial burden on the Examiner to use the results of the necessary polynucleotide search to examine the polypeptide claims.

Second, Applicants traverse the Restriction Requirement as between the Group I and Group III (drawn to the polypeptides and antibodies to the polypeptide, respectively), and hence Group II. The claims of these groups could be examined at the same time, also without an undue burden on the Examiner. A search of the prior art to determine the novelty of the antibodies would substantially overlap with a search of the claims directed to the polypeptides. Thus, Applicants submit that examining the prior art for the polypeptides together with the antibodies would involve substantially the same subject matter and would not impose an undue burden on the Examiner.

Accordingly, as submitted above, a search of the claimed polynucleotides would include the claimed encoded polypeptides. Therefore, it is submitted that it would not be a substantial burden on the Examiner to use the results of the necessary polynucleotide search to examine the polypeptide together with the antibody claims.

Applicants point out to the Examiner that a recent BLASTP analysis (Exhibit A) of SEQ ID NO:7 (Incyte Polypeptide ID No. 2645806CD1, see Table 2) shows that SEQ ID NO:7 shares 100% sequence identity to the protein identified as NXT2 (see Herold, A. et al. article) which is also known as DC9 and p15-2a (A. Herold, et al. (2000) Mol. Cell. Biol. 20(23):8996-9008, Tab No. 1). The RNA transport domain and NTF2 domain of NXT2 are known to be involved in the binding of RNA and CTE (constitutive transport element of simian type D retroviruses to promote nuclear export of their genomic RNAs, Herold et al., p. 8996), which is essential for transport of RNA and protein (Herold et al., p. 8999, second column, first paragraph). For the Examiner's convenience, Applicants point out to the Examiner that although NTF2 is longer than Applicants' sequence, they have identical functional domains (Exhibit B). In addition, the Herold, et al. article demonstrates that examining the prior art for the polynucleotides together with the polypeptides would involve substantially the same subject matter/sources and would not impose an undue burden on the Examiner.

In addition, Applicants submit that claim 25, drawn to a transgenic organism comprising the recombinant polynucleotide of claim 23 belongs within the elected claims of Groups II. This claim is directed to a product that contains the claimed recombinant polynucleotide of claim 23 to be searched by the Examiner. Therefore, a search of the claimed recombinant polynucleotide of claim 23 would

substantially overlap examination of a transgenic organism of claim 25 and would not be an undue burden on the Examiner.

Applicants further traverse on the grounds that the Examiner should also examine the new claims since the sequences are part of a Markush group. Applicants submit that these Markush groups are proper. M.P.E.P § 803.02, reproduced below in its entirety, with relevant portions highlighted:

**PRACTICE RE MARKUSH-TYPE CLAIMS**

> If the members of the Markush group are **sufficiently few in number or so closely related** that a search and examination of the entire claim can be made without serious burden, the examiner must examine all claims on the merits, even though they are directed to independent and distinct inventions. ***In such a case, the examiner will not follow the procedure described below and will not require restriction.***
>
> Since the decisions in *In re Weber*, 580 F.2d 455, 198 USPQ 328 (CCPA 1978) and *In re Haas*, 580 F.2d 461, 198 USPQ 334 (CCPA 1978), **it is improper for the Office to refuse to examine that which applicants regard as their invention**, unless the subject matter in a claim lacks unity of invention. *In re Harnish*, 631 F.2d 716, 206 USPQ 300 (CCPA1980); and *Ex parte Hozumi*, 3 USPQ2d 1059 (Bd. Pat. App. & Int. 1984). Broadly, **unity of invention exists where compounds included within a Markush group (1) share a common utility and (2) share a substantial structural feature disclosed as being essential to that utility**.
>
> This subsection deals with Markush-type generic claims which include a plurality of alternatively usable substances or members. In most cases, a recitation by enumeration is used because there is no appropriate or true generic language. A Markush-type claim can include independent and distinct inventions. This is true where two or more of the members are so unrelated and diverse that a prior art reference anticipating the claim with respect to one of the members would not render the claim obvious under 35 U.S.C. 103 with respect to the other member(s). In applications containing claims of that nature, **the examiner may require a provisional election of a single species** prior to examination on the merits. The provisional election will be given effect in the event that the Markush-type claim should be found not allowable. Following election, the Markush-type claim will be examined fully with respect to the elected species and further to the extent necessary to determine patentability. If the Markush-type claim is not allowable over the prior art, examination will be limited to the Markush-type claim and claims to the elected species, with claims drawn to species patentably distinct from the elected species held withdrawn from further consideration.
>
> As an example, in the case of an application with a Markush-type claim drawn to the compound C-R, wherein R is a radical selected from the group consisting of A, B, C, D, and E,

the examiner may require a provisional election of a single species, CA, CB, CC, CD, or CE. The Markush-type claim would then be examined fully with respect to the elected species and any species considered to be clearly unpatentable over the elected species. If on examination the elected species is found to be anticipated or rendered obvious by prior art, the Markush-type claim and claims to the elected species shall be rejected, and claims to the nonelected species would be held withdrawn from further consideration. As in the prevailing practice, a second action on the rejected claims would be made final.

**On the other hand, should no prior art be found that anticipates or renders obvious the elected species, the search of the Markush-type claim will be extended.** If prior art is then found that anticipates or renders obvious the Markush-type claim with respect to a nonelected species, the Markush-type claim shall be rejected and claims to the nonelected species held withdrawn from further consideration. The prior art search, however, will not be extended unnecessarily to cover all nonelected species. Should applicant, in response to this rejection of the Markush-type claim, overcome the rejection, as by amending the Markush-type claim to exclude the species anticipated or rendered obvious by the prior art, the amended Markush-type claim will be reexamined. The prior art search will be extended to the extent necessary to determine patentability of the Markush-type claim. In the event prior art is found during the reexamination that anticipates or renders obvious the amended Markush-type claim, the claim will be rejected and the action made final. Amendments submitted after the final rejection further restricting the scope of the claim may be denied entry. [emphasis added]

As can be seen from the above, it is clear that the present Restriction Requirement does not meet the Patent Office's own requirements.

For example, SEQ ID NO:15 and SEQ ID NO:10 meet the Office's requirements for unity of invention. As shown in Exhibit C, SEQ ID NO:10 encodes the polypeptide of SEQ ID NO:2 having the identical structural domains found in SEQ ID NO:7. Applicants also enclose for the Examiner's convenience, a CLUSTALW alignment of SEQ ID NO:2 and SEQ ID NO:7, which further illustrates that SEQ ID NO:2 and SEQ ID NO:7 share the RNA transport and NTF2 domains (Exhibit D). Accordingly, each polynucleotide sequence encodes a protein that functions in the transport of proteins and shares substantial structural features.

As stated in M.P.E.P § 803.02, "should no prior art be found that anticipates or renders obvious the elected species, the search of the Markush-type claim will be extended." Thus, Applicants have provided scientific evidence that not only do SEQ ID NO:15 and SEQ ID NO:10 share structural similarities, these shared structures are involved in similar biological functions thereby meeting the Office's own rules for examination of a Markush group. Therefore, it is respectfully submitted that,

upon searching and examining polynucleotides encoding the polypeptides relating to SEQ ID NO:7 and finding of no prior art which anticipates or renders obvious SEQ ID NO:15, examination should be extended to SEQ ID NO:10 as well as the other claimed sequences.

Second, if the number of "members of the Markush group are **sufficiently few in number or so closely related** that a search and examination of the entire claim can be made without serious burden, the examiner must examine all claims on the merits, even though they are directed to independent and distinct inventions. **In such a case, the examiner will not follow the procedure described below and will not require restriction**." Withdrawal of the restriction requirement as between the **seven** (7) specific sequences each in the claims is required on that basis alone.

Third, "**it is improper for the Office to refuse to examine that which applicants regard as their invention**, unless the subject matter in a claim lacks unity of invention . . . Broadly, **unity of invention exists where compounds included within a Markush group (1) share a common utility and (2) share a substantial structural feature disclosed as being essential to that utility**." Clearly, the seven polynucleotides of the instant invention, and polypeptide sequences encoding by them, share both a common utility and structural homology, based on their classification as human protein transport-associated molecules.

Fourth, even if the claims could be considered to be "Markush-type generic claims which include a plurality of alternatively usable substances or members," it is further noted that the M.P.E.P states that "A Markush-type claim can include independent and distinct inventions. This is true where two or more of the members are so unrelated and diverse that a prior art reference anticipating the claim with respect to one of the members would not render the claim obvious under 35 U.S.C. 103 with respect to the other member(s). In applications containing claims of that nature, "**the examiner may require a provisional election of a single species** prior to examination on the merits" but if no prior art is found, examination must continue on the other claimed species. This clearly applies in the present case.